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EXPERIMENT STATION, TUSKEGEE NORMAL AND INDUSTRIAL INSTITUTE, TUSKEGEE INSTITUTE, ALA.

# Poultry Raising

*in Macon County, Alabama*



*By*

G. W. Carver, M. S. Agr.

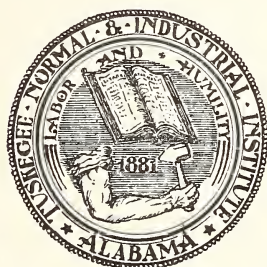
*Director*



EXPERIMENT STATION  
TUSKEGEE NORMAL AND INDUSTRIAL INSTITUTE  
TUSKEGEE INSTITUTE, ALABAMA

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POULTRY RAISING IN  
MACON COUNTY  
ALABAMA



**BULLETIN NO. 23**

BY  
GEORGE W. CARVER, M. S. AGR.

# The Tuskegee Experiment Station

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## **Poultry Raising in Macon County, Alabama**

**By G. W. Carver, M. S. Agr., Director**

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Of all the get-rich-quick schemes there is probably none more productive of delusion than that of poultry raising on paper. And yet, with the proper facilities and applied intelligence, possibly more handsome returns can be had from poultry than any other industry in proportion to the amount of capital invested and the readiness with which results can be obtained.

There is an idea prevalent that poultry cannot be successfully raised in the South. This saying has been so oft repeated and the apparent truth so universally verified that the majority of our people believe it and make but little or no effort to prove it false.

Years of costly experimentation and investigation have removed many of the apparent unsurmountable obstacles, so that there remains no doubt as to its possibilities. It is therefore the purpose of this bulletin to set forth, in as clear and concise a way as possible, a number of rules and suggestions which, if carried out, will enable an amateur to successfully grapple with this problem.

It is hard to conceive of a great state with 223,220 farms, aggregating 20,685,427 acres, with a grand total of only 5,186,536 fowl of all kinds and ages upon these farms, which would mean, in round numbers, 23 fowl to the farm, or about 4 fowl to the acre.

### **NATURAL ADVANTAGES**

In our investigations the following truths were brought to light:

(a). That the country as a whole is high, well drained, with mild climate, plenty of good sharp sand, and that throughout the county green stuff of some sort, such as wheat, oats, rye, clover, vetch, rape, etc., may be grown the year round. Good, wholesome water is also plentiful. All the above are indispensable adjuncts to successful poultry raising.

### **MARKETS**

I think I am safe in the assertion that, as far back as history records, there never was a time without a good market for poultry



and poultry products. In fact, in recent years the demand has been far in excess of the supply.

Should production go beyond home demands, we are very near three great centers of consumption, Montgomery, Birmingham and Atlanta, and in addition to these we have the most excellent facilities for reaching all the important points north, south, east and west.

(b). We found further that the fowl, almost without exception throughout the county, was of a very poor class of mongrels (mixed breeds), which showed to a marked degree the weakening effect of inbreeding and poor selection or no selection at all.

(c). That these weak, anemic fowls were subject to all kinds of diseases as they sickened and died in large numbers under the most favorable treatment we could give them.

(d). That they were very poor layers; that the eggs produced were low in fertility and often sterile altogether; that the chicks from the eggs that did hatch were weak and but few able to stand artificial conditions, so an exceedingly small number ever reached marketable size.

#### ORIGIN AND BUILDING UP OF THE FLOCK

Before we can intelligently build up a flock we must of necessity know something of the origin of the various birds with which we must deal. The best authorities claim that all our splendid varieties, types and assortment of fowl originated from a single jungle fowl of India. This wild chicken was quite small, and in color, resembled our black breasted game breed. The prairie chicken and the quail belong to the same zoological family and all have strikingly similar habits.

There is but little doubt that the chicken spread from its natural home in India, east and west, until its origin was almost lost by reason of its large and variable numbers and wide distribution.

Out of the eighty-seven standards and a large number of promiscuous varieties of chickens raised in this country, I shall deal with only a few that have proved the best by actual test.

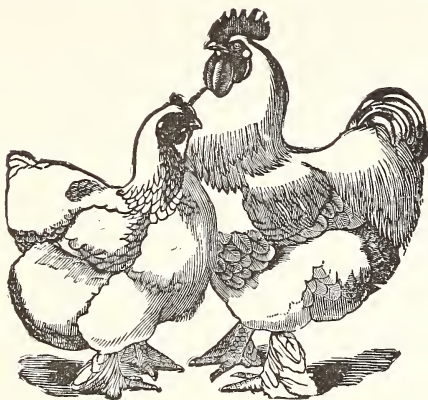
Professor George E. Howard, an eminent authority on poultry, has subdivided the ten great classes into which the various breeds of poultry are divided, and reduced them to four.

#### THE AMERICAN CLASS

The Barred, Buff, Pea Comb Barred and White Plymouth Rocks; Silver, Golden, White, Buff and Black Wyandottes; Black, Mottled and White Javas; American Dominiques and Jersey



Blues—all are the most conspicuous members of this group. They



THE GENERAL PURPOSE BREEDS

are reasonably good layers, make excellent mothers and turn out a nice lot of meat when killed.

#### BARRED PLYMOUTH ROCK

With us this is the most popular of all the above breeds, being good layers, reasonably free from disease, fine mothers, and easy to keep. Their history dates back over a quarter of a century, being constantly improved from year to year until almost a perfect fowl has been produced. They are of good size, a full-grown cock often weighing as much as 9 1-2 pounds, and hens 7 1-2 pounds. The meat is of superior quality.

#### (b) MEDITERRANEAN CLASS

The Brown, Rose Comb Brown, White, Rose Comb White, Black, Dominique, Buff and Silver Duckwing Leghorns, Black and White Minorcas, Andalusians, and Black Spanish, all belong to the above class and are noted for their great egg production. Aside from this they have but little to recommend them, as they are too small for market purposes, cannot be relied upon as mothers, are high-flyers, and hard to keep just where wanted.

#### WHITE AND BROWN LEGHORNS

These are the best known and the best established of all the breeds. Fancy must dictate which of the breeds you will choose, as there are practically no points of superiority in them except the color. They are highly organized, nervous egg machines, and if warmly housed, and properly fed, are the best of all winter layers; but if poorly housed and compelled to pick up their living from

the slush of the barnyard, they are probably the poorest of the popular breeds. The cocks when grown weigh about six, and the hens, about four pounds.

#### RHODE ISLAND REDS

The above is one of the promising new breeds that has recently sprung into prominence. It is in size and appearance much on the



NON-SITTING BREEDS

order of the Buff Rock or the Buff Cochins, except that it is neater and more trim in its make-up, and in color is of a decidedly rich, handsome, redish brown.

The chicks are almost invariably disappointing, with their variously colored feathers, looking like a miserable lot of little mongrels. They often do not show what they are until after the first molt. As a rule they become richer and redder in color as they grow older. With us they are most excellent layers, good sitters, rapid growers, and I believe with others, that they are one of the coming all-purpose breeds.

As has been stated, these are the fowl that have done the best for us, but they are by no means the only good breeds that are likely to succeed in this locality. Indeed, I have found this to be true: that a person will succeed best with the breed he likes best; that is, a passionate lover of the Brown Leghorns, who has a disdain for the White, will never succeed with the White; and so on with the various breeds. So we strongly advise that you select, from a list of varieties, the breed or breeds you like best, and give them all the attention that theoretical and practical education will afford, and you cannot but succeed.

#### HOUSING

After selecting the desired breed, the kind of house is the next

thing in importance, which in this climate need not be expensive, but it should be well built and not be a veritable death trap as so many so-called houses in this county are.

A lean-to house, with the lowest part to the west and the highest to the front, is the most preferable. One 12 feet wide and 16 feet long, with the lowest side sufficiently high to clear the head with ease, will accommodate from 75 to 100 hens.

There should be at least 12 nests provided and three long perches, reaching from one end of the house to the other. These perches should be very smooth and from 1 1-2 to 2 inches wide. Do not put them more than two feet from the ground (floor).

The floor should be clay, moistened and tamped down hard.

A door in the south and the east is desirable; also a large window in the east covered with small, mesh, poultry wire. A board or canvas shutter should be provided so that it can be closed during the severest weather.

### HATCHING CHICKS WITH HENS

For the average farmer or poultry raiser this is by far the safest and best method. Beware of the person who tells you that artificial incubation and brooding is a "dead easy thing," and that any one with ordinary intelligence can do it. Such a person is either too ignorant to know the real difficulties that stand in his way or has become an expert by study and experience.

### SELECTING THE EGGS FOR HATCHING

There are a great many ideas in vogue regarding the size, shape, color, etc., of eggs suitable for hatching. Many of these ideas have been proved to be without foundation. The following, however, are safe rules to observe:

1. Never select abnormally large eggs.
2. Never select abnormally small eggs.
3. Never select lop-sided eggs.
4. Never select thin-shelled eggs.
5. Never select an egg with a shell that is ridged or defective in any way.
6. Do not set eggs over two weeks old.
7. Keep eggs for hatching in a cool, dry place, and every other day roll them over gently with the hands.
8. Do not handle the eggs with greasy or soiled hands.
9. Handle with great care so that the shells will not be cracked or injured.
10. As far as possible and practicable select and set eggs of one breed; that is, do not mix eggs from Leghorns, Rocks, Reds, etc., in the same setting, as they invariably hatch better when kept separate.

11. Always select eggs from active, healthy, and well-mated fowls. Such eggs are usually fertile. Eggs laid by pullets and at the beginning and end of the laying period rarely ever hatch well, and still more rarely produce strong, vigorous birds.

### HOW TO BUILD A NEST

An excellent nest may be made in a box or room as follows:

Prepare a place 14 inches wide, 14 inches high, and 16 inches long. An ordinary soap box often serves the purpose well. The box should be covered on top, bottom, and all sides, except the upper half where the hen enters. A slat shutter is often desirable to keep the sitter from being unduly disturbed.

Many poultry raisers prefer to set in boxes outside of the house so that the boxes and their contents can be burned as soon as the hatch is taken off. Mites and lice can be kept under control with comparative ease in this way. In very hot, dry weather it is better to put some earth in the bottom of the boxes or set them directly on the ground. After throwing a shovelful of earth into the boxes, shape a nest of clean straw. The nest should be roomy enough so that, when the hen steps in, the eggs will spread apart and not be broken.

Do not set a hen that is wild, nervous, and ready to flutter and fly off scattering and breaking the eggs at the least provocation; but rather choose one that will allow you to put your hand under her without jumping off. There is no objection to her fighting with the bill. Food, grit and water should be provided so that she can get it whenever she desires.

A small hole, about the size of a bushel basket, scooped out of the earth to a depth of a foot or so and filled with dry road dust and ashes, into which a pint of flowers of sulphur has been thoroughly mixed, makes an excellent dusting place; and by keeping the premises clean, there need be few if any lice or mites.

### NUMBER OF EGGS TO SET

This depends almost wholly upon the size of the hen and the condition of the weather. The cooler the weather, the fewer the eggs can be covered with safety. The numbers range from 12 to 15. Broken eggs should be removed from the nest at once and the remaining eggs and nest cleaned. If everything has been looked after properly, in 21 days you may look for a large percentage of good, strong little biddies.

### CARE OF YOUNG CHICKS

Very early in the spring the chicks must be carefully guarded

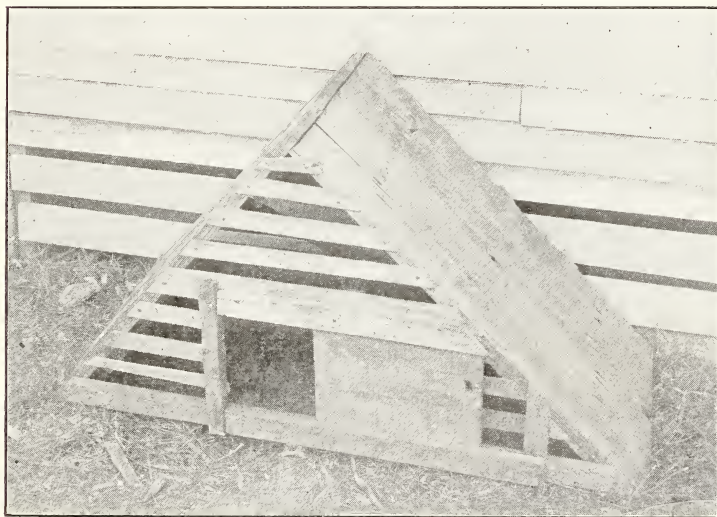


against rain, heavy dews, and kept off the cold, wet ground. Under the above conditions it is best to keep the hen and her brood in some building.

During most of the season an out-door coop is all that is neces-



A GOOD HATCH



A SPLENDID COOP

sary It is highly important that this coop be made cat and rat proof as cats, rats, opossums, minks, weasels, etc., will destroy the little chicks in great numbers unless protected. The illustration shows an excellent coop for the hen and her brood.

It is so simple in construction that a detailed description is unnecessary more than to say that the inside of the latticed work is lined with small mesh poultry wire, and the coop set on a board bottom or fastened to it as you may choose.

### FEEDING THE CHICKS

There is so much that has been and is being written, and so many opinions which differ widely, that one hesitates to give any one particular method as the best. However, I will give you the ones that have succeeded best with us.

Every one of experience knows that chicks are likely to die in considerable numbers until they are four weeks old. So therefore their life, for convenience sake, may be divided into three stages:

First Stage.—A continuation of the period of incubation, which lasts, as a rule, from three to four days. The yolk of the egg is absorbed into the chick's body just a few hours after it emerges from the shell and serves as food for the first 24 hours.

If the chicks are with a hen she will see to the water, heat, food, etc., providing favorable conditions are provided for her.

At this stage the chick spends most of its time in sitting or standing about and sleeping. If artificially brooded the temperature should be almost as high as when incubated, say, from 98 to 100 degrees Fahrenheit.

Incubator chicks should not be removed to the brooder until 24 or 36 hours old. Great care must be taken to prevent chilling, as this is easily done, and the results are fatal.

Second Stage.—When the natural instincts develop (which as a rule extends from the third to the tenth day), it is considered the second period. At this age the majority of them will be able to distinguish harmless substances from the injurious. Before this they seem to have no discriminating power, but will eat anything they can get hold of, digestible or indigestible, and will eat as long as they can swallow, with fatal results.

Third Stage.—The time when the chick becomes selective in its food, marks the third period.

From the first period till the chicks are four weeks old, the subject of feeding is quite a problem. Unless it is done with care the death rate will be exceedingly high. This is especially true with incubator chicks.

When the chicks are from 24 to 36 hours old they should have their first meal of food. Prior to this a pan of finely powdered charcoal and sand, in the proportion of two-thirds charcoal and one-third sand, is placed before them.



The dry method of feeding has proved the most satisfactory here; so, therefore, we use this method altogether, and scatter a little prepared chick-food in their feeding troughs.

Feed regularly and often, but just a little at a time, as at this stage they will overeat, with serious results. We feed from five to six times a day.

After the third or fourth day a little green-stuff and animal food, such as beef meal, beef scrap, or blood meal, or a little fresh beef finely ground, may be given.

The following experiment stations and large poultry concerns have worked out these interesting and valuable mixtures for the feeding of chicks:

Poultry raisers almost universally agree that, for the first two or three days, hard-boiled eggs is the ideal food for baby chicks. For this they use the infertile eggs from the incubators, boiling them for half an hour. After this they run them through a meat-chopper, grinding them real fine, shells and all. Some mix a little chick grit with it. This is especially recommended where shard sand is not plentiful.

#### MIXTURE NUMBER ONE

(TUSKEGEE STATION)

Wheat.....	1 pint
Corn.....	1 "
Cow peas.....	1 "
Sorghum seed.....	1 "
Rye.....	1 "
Rice.....	1 "

Grind the above to the consistency of coarse grits, and feed dry.

Four or five dollars will purchase a spice mill sufficient to grind enough food for several hundred chicks.

#### MIXTURE NUMBER TWO

(MAINE STATION)

Cracked wheat.....	15 parts by weight
Pin-head oats (granulated oatmeal).....	10 " " "
Finely screened cracked corn.....	15 " " "
Finely cracked peas.....	3 " " "
Broken rice.....	2 " " "
Chick grit.....	5 " " "
Fine charcoal (chick size).....	2 " " "

This is fed in the litter, care being taken to limit the quantity so that they will not be hungry at 9 a. m.

## MIXTURE NUMBER THREE

(PRAIRIE STATE INCUBATOR COMPANY)

Cracked wheat.....	25 lbs.
Cracked corn.....	12 "
Millet seed.....	10 "
Oat meal.....	10 "

This is the basis of nearly all chick feed. Other seeds, when available, can be added in the following proportions:

Rape.....	3 lbs.
Cracked wheat.....	10 "
Cracked rice.....	2 "
Kaffir corn.....	25 "
Hemp seed.....	2 "

## THE CYPHERS INCUBATOR COMPANY

## JOHNNY CAKE NUMBER ONE

- 2 quarts bran or shorts
- 2 " coarse corn meal
- 1 quart wheat middlings
- 1 handful good, clean beef scraps
- 1 " good chicken grit

Rub together dry with from two to four infertile eggs. Mix with barely enough skim milk to moisten it, and rub the whole into a moist, crumbly mass with the hands. Then pit it in a well-greased pan (a roasting pan about three inches deep is the best), and press down hard enough to stick the cake together. Bake in a slow oven from three to six hours. This makes an easily crumbled cake, and when properly prepared, should have no stickiness or doughiness about it.

## JOHNNY CAKE NUMBER TWO

- 2 1-2 quarts bran
- 2 1-2 " corn meal
- 2 " ground oats sifted
- 1 quart clover meal
- 1 handful coarse bone meal
- 1 " beef scraps

Mix together dry, and rub in half a dozen infertile eggs. Wet with milk or water or both, and add one heaping teaspoonful of baking soda and one teacup of pure cider vinegar. Mix the whole thoroughly into a stiff dough, and bake from three to six hours in a slow oven.

It is claimed for this Johnny cake that, where chicks are not very strong and have a tendency to bowel trouble, it will prevent "pasting up behind."

A popular first food with some is a mixture of cracker and bread crumbs, rubbed with hard boiled eggs, with no other moisture used than that in the eggs.

The little chicks are fed four or five times a day (every 21-2 or 3 hours) for the first week, keeping them at all times a wee bit hungry, never feeding more at any one time than they will eat up clean and quickly.

A few years ago our Station made quite an exhaustive test of Johnny Cake Number One, and found it a most excellent food. The chicks ate it greedily, and seemed to grow off very fast.

#### MAINE STATION, METHOD NO. 2 FOR CHICKS THREE WEEKS OLD

Wheat bran (clean).....	2	parts by weight
Corn meal.....	4	" " "
Middlings or "red dog" flour ..	2	" " "
Linseed meal.....	1	" " "
Screened beef scrap.....	22	" " "

The mixture is moistened with just enough water so that it is not sticky but will crumble when a handful is squeezed and then released.

#### O. A. C. STATION METHOD

Dry mash, which is fed until chicks are six weeks old in shallow boxes or self-feeding hoppers, is compounded as follows:

5 pounds blood meal (unmoulded)

2	"	charcoal
20	"	middlings
22	"	corn meal
22	"	buckwheat meal
23	"	oat meal
5	"	fine bone meal

Where blood meal of good quality cannot be obtained finely sifted beef scrap can be used instead.

#### WEST VIRGINIA STATION METHOD

I have had good results from feeding dry mash ad libitum to chicks just from the incubator.

The mash is composed of equal parts of corn meal, wheat bran and ground oats, with the coarser particles sifted out, and ten or fifteen per cent of beef scrap.

The mixture is placed in shallow dishes where the chicks have constant access to it. A fresh supply of the dry mash is usually provided each day, that which is rejected or uneaten being fed to older fowls.

In addition to the mash the chicks are fed whole grain scattered in litter so that they are obliged to scratch for it. When fed in this way the labor is very much reduced and the chicks grow and thrive at least as well as when cared for by the average poultryman.

### LAYERS AND BREEDERS

There is such a vast difference between fowl kept for laying purposes and those kept to produce eggs for hatching that I deem a few words along this line will be quite acceptable. While no hard and rigid methods can be laid down this fact is apparent: that for laying purposes only, the flock may range from 50 to 100 birds. No male should be allowed with them as they lay better without.

For breeding purposes flocks of 10 or 15 hens and one male bird give the best result as a rule. Each poultry keeper will have to accommodate the size of his flock to his own particular circumstances, being careful not to overdo or underdo too far.

### METHODS OF FEEDING AND FERTILITY

As to feeding, each poultryman of experience has his own particular method, while in the main there are a few fundamental principles which all must observe if success is obtained.

In the hen the chief uses of the food is to build tissue, to repair the waste and to produce eggs.

After selecting good, strong yearling hens that have never been sick, if possible, and after using even greater precautions in selecting the male, as he really represents two thirds of the flock, you are ready to begin the unique task of feeding. Many and varied are the rations recommended, all of which possess greater or less merit. A few of the most satisfactory ones follow, covering a wide territory, with the hope that every poultry raiser will be able to select in toto or modify a ration to suit his particular locality or peculiar needs.

### FEEDING FOR EGGS AND FERTILITY

The Cyphers Incubator Company feeds five evenings in the week a mash made as follows:

Corn and oat chop.....	40 pounds
Heavy bran.....	30 "
Fancy middlings.....	20 "
Beef scraps from.....	10 to 15 "

Just enough fluid (water) is used to stick the mash together. Feed a liberal quantity, but do not gorge. Scatter plenty of corn, oats and other grain in a litter at night so that they can begin scratching early in the morning.

## AN EXCELLENT RATION FOR 100 HENS

We have fed this ration here at Tuskegee with excellent results. Make a mash as follows:

2	quarts	corn meal
2	"	meat scraps

The rest is scraps from our dining room table. The whole when mixed fills two common wooden water pails about three-quarters full. Just enough water is used to make it hold together well. It is slightly warmed in severe weather but fed cold in mild weather.

If one quart of an equal mixture of wheat, oats and cracked corn, is scattered in hay, straw, leaves, or any clean litter, they will go to scratching at once.

About ten or eleven o'clock they are given access to green food, such as growing oats, wheat or rye, rape, cabbage, turnips, rutabagas, vetch, clover—in fact, anything green. When green stuff is scarce sweet potatoes boiled make an excellent substitute. They will also eat them raw if very hungry. For supper two quarts of cracked corn, two quarts of wheat and one quart of oats are mixed together and fed.

The "Farmers' Tribune," of November 19, 1909, published the following eight methods of feeding which we have found excellent:

The Maryland Experiment Station feeds a grain ration composed of 100 pounds each of cracked corn, wheat and oats. Of this mixture two quarts are fed to 40 fowls for the early morning feed. During the middle of the forenoon, a about nine o'clock, from three to five pounds of cabbage are supplied and at noon two quarts more of the grain are given. During the remainder of the day the hens eat what they wish from a hopper kept filled with a mash mixture made up as follows: 100 pounds bran, 50 pounds each of linseed meal, corn meal, middlings and beef scrap, 2 pounds charcoal and 2 pounds salt. The morning feed is scattered in the litter late in the afternoon after the chickens have gone to roost. This is done so that they can get their feed on time in the morning. The noon allowance of grain is also scattered in the litter while the cabbage is hung up in places where the hens can eat the succulent food without getting it soiled with manure. Fresh water is kept before the hens at all times. It will be observed that this method of feeding is inexpensive so far as labor is concerned, yet the hens are fed with regularity, an item that is of very great importance. Other grain and mash mixtures, together with methods of feeding of successful Maryland poultry growers, are given in a recent Maryland bulletin as follows:

## METHOD NUMBER TWO—DRY SYSTEM

Grain: Wheat screenings and corn. Mash mixture: One bushel wheat, two bushels bran, one-half peck beef scrap, four teaspoons of ginger and black pepper mixed to every bushel of mash.

In the mornings the fowls receive a feed of wheat screenings well scattered in the litter, and alternating mornings cabbage and



ear corn are hung up in the pen. A liberal feed of shelled corn is given at night. The dry mash mixture, beef scraps, grit and shell are kept in hoppers to which the fowls have free access at all times.

#### METHOD NUMBER THREE—DRY SYSTEM

Grain mixture: 100 pounds each of wheat, corn, barley, oats, buckwheat, Kaffir corn. Mash mixture: 100 pounds each of model egg mash and wheat bran, 200 pounds beef scrap and some charcoal and salt.

The hens on this farm are kept in flocks of 1,000 and both grain and mash are hopper fed. The fowls are always well supplied with grit, shell and charcoal. The green food is made by sprouting oats and allowing them to grow until they resemble a thick mat of green grass; this is kept before them most of the time. During the molting season linseed and cottonseed meals are added to the mash; sunflower seed is also fed liberally.

#### METHOD NUMBER FOUR—DRY SEASON

Grain mixture: One-half bushel each of corn and wheat. Mash mixture: 200 pounds bran, 100 pounds each of middlings, gluten meal, linseed meal, beef scrap and oatmeal (when available).

The morning feed is the grain mixture scattered in the litter, about one quart to twenty fowls. At 9:30 mangels are given as a green food. The evening feed is given at 3:30, and consists of grain the same as in the morning. The mash mixture grit, shell, charcoal, and bone, are kept in hoppers to which the fowls have free access at all times.

#### METHOD NUMBER FIVE—DRY SYSTEM

Grain mixture: 20 pounds wheat, 40 pounds corn, 10 pounds oats. Mash mixture: 100 pounds each bran, middling, corn meal, beef scrap, and eight pounds charcoal.

Our system (Meyer Bros., Havre De Grace, Maryland) of feeding laying hens is to give half as much more of the grain mixture in the morning as at night. The amount of grain fed is regulated by the quantity of dry mash consumed, our aim being to feed twice as much grain as mash. The grain is fed in the litter or scattered broadcast in the runs in favorable weather. The dry mash mixture, grit, oyster shells, and cracked bones, is fed in hoppers, to which the fowls have free access at all times. During the winter months they are fed about two per cent more corn and two per cent less of wheat. For green food we give (on alternate days) beets, cut clover hay, or alfalfa to every 100 hens. Beginning in August five per cent of old process oil meal is added to the daily ration for the purpose of encouraging and hastening the molt.

#### METHOD NUMBER SIX—WET SYSTEM

Mash mixture: 200 pounds bran, 100 pounds each of corn meal, middlings, gluten meal, linseed meal and beef scrap.

The morning feed is scattered in the litter after fowls have gone to roost, and consists of three quarts of wheat for every 100 fowls. At 9:30 on alternate days one quart of millet seed and one



quart of hulled oats are well scattered in the litter. About 11:00 a. m. green bone is fed at the rate of one-half ounce per bird. At 1:00 o'clock a moist mash of the following ingredients is fed at the rate of four quarts to every hundred fowls: About eight quarts of cut clover hay is scalded, and to this is added twelve quarts of the mash mixture. Mix thoroughly and feed in a crumbly condition. At 2:30 in the afternoon every hundred fowls are given about six quarts of sprouted oats; this is fed as a green food. The evening meal consists of four quarts of corn, to which a little wheat is added in warm weather for every hundred fowls.

#### METHOD NUMBER SEVEN—WET SYSTEM

The morning feed consists of equal parts of wheat and buckwheat fed in the litter. At 10:00 o'clock they are given a feed of green bone and meat mixed. This is fed at the rate of one ounce to every hen. The green bone and meat is procured by buying old horses and cows. The e are slaughtered on the farm, and the hide sold to help pay for the animal. Between three and four o'clock a moist mash of the following ingredients is fed: one bushel of small potatoes (cooked), twenty-five pounds cracked corn, forty loaves of stale bread (which have been soaked for several hours), and enough bran added to t e mass to make it crumbly. At night they receive all the corn they will eat.

#### METHOD NUMBER EIGHT—WET SYSTEM

The morning feed is a moist mash, which is made by mixing bran and clabbered milk together. This is fed in a crumbly condition, and allowing just what they clean up in half an hour. At 10:00 o'clock steamed wheat is fed, giving all that they will eat. At noon the steamed wheat is repeated the same as at 10:00 o'clock. The night feed is corn or wheat, and care is exercised to see that there is none left over for morning. Beef scrap, grit, shell and charcoal, are kept in hoppers, to which the fowls have free access at all times. The process of steaming the wheat is quick and simple. It is placed in a large feed cooker and covered with water. A fire is then started, and the whole allowed to steam for two or three hours. The grain is then very soft and quickly assimilated by the fowls.

#### POULTRY DISEASES

Of the almost innumerable number of diseases catalogued by some poultrymen, only a few are especially troublesome in this county; and with proper care they can be easily mastered by faithfully following the directions for cleanliness and those given under each disease.

1. The poultry house should be whitewashed at least once every two months, and oftener if disease breaks out. For every gallon of whitewash stir in two of strong carbolic acid, and apply with a brush as usual, being careful that it gets into every crevice.

It is best in large flocks to remove the droppings every day, and especially in hot weather, as they are great breeders of disease.

Drinking troughs should be washed out daily, and never be allowed to collect a coating of slime.

The feed-boards and troughs should be washed, scraped and dried in the sun frequently.

#### ROUP (DIPHTHERIA, BIG EYES, ETC.)

Are all names for the same or similar diseases. Thousands of chickens in the county die every year from this disease. The principal characteristics are a wheezing sound made by the fowl, the swelling-up of the head, eyes and an offensive smelling, cheesy deposit in the throat and nostrils.

The first thing to do is to remove all affected birds, as the disease is contagious. Then look for the cause, which is likely to be this: weak and run-down breeding stock, filthy quarters, draughty houses, etc

2. Give a thorough cleaning and disinfecting, and treat the sick birds with one of the following remedies, all of which we have found good:

No. 1.—Remove the cheesy matter from the throat and nostrils; wash the head and all affected parts with warm water; remove the scales from the sores if any; paint with iodine, repeating the treatment every other day until cured.

No. 2.—The same as for No. 1, except that strong carbolic acid is used instead of iodine.

No. 3.—Spirits of turpentine (1 part) and glycerine (6 parts) is an excellent remedy; apply the same as recommended for Nos. 1 and 2.

No. 4.—Molasses thickened with flowers of sulphur and applied the same as the above, will oftentimes cure where the other remedies fail.

No. 5.—A two per cent solution of creoline.

No. 6.—Peroxide of hydrogen and water, equal parts.

No. 7.—One grain of permanganate of potash to an ounce of water. Inject the fluid into the nostrils.

#### CHOLERA

The so-called cholera is too familiar to all poultry raisers to need description here. The removal of all sick birds and a thorough cleansing of the houses, runs, etc., is absolutely essential to the stamping out of the disease. The Kansas State Experiment Station found that a spray consisting of one-half gallon of phenol, mixed together, made an excellent disinfectant. One part of corrosive sublimate in 2,000 parts water was given the fowl to drink.

#### SCALY LEGS

This disease is due to a parasite, and is similar to the mange of the cat and dog. A simple and effective remedy is to bathe the feet and legs in warm water until thoroughly cleansed. Dry and anoint with equal parts of linseed oil and kerosene. The scales will soon drop off. Disinfect the roosts, perches, nests, etc., wherever the diseased fowl has access. Use a three per cent solu-

tion of carbolic acid. The whitewash, with carbolic acid in it, will answer very well.

### CHICKEN POX (SORE HEAD, ETC.)

Makes its appearance in the form of yellow scabs or pimples on the face about the eyes, and the comb. Dampness favors its development.

Treatment: Remove the affected bird to good, clean, dry quarters, and with a feather or camel's hair-brush, paint the scabs with a 10 per cent solution of carbolic acid mixed with a 10 per cent solution of iodine. A 10 per cent solution of copper sulphate has been found effective.

### LICE AND MITES

The parasites referred to as chicken lice include many different species, which are rather too technical to discuss in a work like this, more than to say that the two most troublesome ones in this section are the body louse and the rooster mite. Body lice are to be found in greater or lesser numbers on nearly all chickens and many other kinds of birds. They eat the feathers and skin, and are especially bad on setting hens. The following methods will hold them in check if intelligently carried out.

METHOD 1.—Provide the fowl with plenty of fine dust, such as ashes, road dust, etc., into which a few spoonful of flowers of sulphur have been stirred. This dust-bath soon rids the fowl of body lice.

METHOD 2.—Is by the use of insect powders, such as pyrethrum, tobacco dust, and a large number of commercial lotions and powders, all of which give directions for their use on the containers.

A favorite way to use most powders is to hold the fowl by the feet and dust the powders on, working it carefully into the feathers. This must be done once a week for three weeks at regular intervals.

### MITES

in their habits are somewhat like bed bugs—they secrete themselves during the day in cracks, rubbish, accumulated droppings from the fowls, etc., and at night they come out and suck the blood from the fowls, often compelling the setting-hen to leave the nest, and frequently killing young chicks. Thorough and frequent whitewashing and daily cleaning of the house, will soon get rid of this pest.

Where the mites are exceptionally bad put two additional spoonful of carbolic acid into the whitewash, and see that every

crack in and about the house is filled with it. There are also many prepared mite-killers, which are good and will prove effective if the directions found on the containers are followed.

### FLEAS AND CHIGOES

are very troublesome, and breed in dark, dirty, filthy places. Clean up the same as for mites; soak the ground well with hot soap-suds; continue the treatment once a week for three weeks, and the fleas and chigoes will soon disappear.

Wherever the mites are found on the fowl, bathe freely with dilute alcohol or vinegar, and immediately follow with an anointing of vaseline, into which a little napcreole has been stirred.

### A MONTH'S RECORD OF THIRTY-FIVE BARRED PLY-MOUTH ROCK HENS

A few years ago one of our neighbors (Mrs. C. J. Calloway) became an enthusiast on the raising of poultry. She began with a few fowl, continued to breed up and improve her stock, until she secured a pen of 35 nice hens. For the month of January, 1909, she handed me the following accurate and interesting data, which is well worth your reading:

#### INCOME

Eggs laid.....	40 doz.		
Eggs sold for table use.....	37	@ \$ 35.....	\$12 95
Eggs sold for setting.....	3	" " 75.....	2 25
Four hens.....	"	75.....	3 00
Two roosters.....	"	1 50.....	3 00
Manure.....			35
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Total.....			\$21 55

#### EXPENSES

4 bu. oats.....	\$3 20	
2 bu. corn.....	1 60	
50 lbs. shorts.....	1 00	
Green bone.....	15	
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Total.....	\$5 95	\$ 5 95

Total income for January.....\$15 60

What Mrs. Calloway has done every person owning chickens can do. So let every person make a strenuous effort in the matter of poultry raising, and make Macon County, Alabama, the banner county of the entire South.